Record Nr. UNINA9910166645603321 Autore **Christopher Cullis** Titolo Recent Advances of Epigenetics in Crop Biotechnology Pubbl/distr/stampa Frontiers Media SA, 2016 Descrizione fisica 1 electronic resource (189 p.) Collana Frontiers Research Topics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico

Monografia

Sommario/riassunto

Epigenetics is a new field that explains gene expression at the chromatin structure and organization level. Three principal epigenetic mechanisms are known and hundreds of combinations among them can develop different phenotypic characteristics. DNA methylation, histone modifications and small RNAs have been identified, and their functions are being studied in order to understand the mechanisms of interaction and regulation among the different biological processes in plants. Although, fundamental epigenetic mechanisms in crop plants are beginning to be elucidated, the comprehension of the different epigenetic mechanisms, by which plant gene regulation and phenotype are modified, is a major topic to develop in the near future in order to increase crop productivity. Thus, the importance of epigenetics in improving crop productivity is undoubtedly growing. Current research on epigenetics suggest that DNA methylation, histone modifications and small RNAs are involved in almost every aspect of plant life including agronomically important traits such as flowering time, fruit development, responses to environmental factors, defense response and plant growth. The aim of this Research Topic is to explore the recent advances concerning the role of epigenetics in crop biotechnology, as well as to enhance and promote interactions among high quality researchers from different disciplines such as genetics, cell biology, pathology, microbiology, and evolutionary biology in order to join forces and decipher the epigenetic mechanisms in crop